

**STATE OF NEW HAMPSHIRE**

**2004 Section 305(b) and 303(d)  
Surface Water Quality Report**

**Volume 4 of 4  
Additional Section 305(b)  
Submittal Requirements**

**March 2004**



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**Surface Water Quality Report**

**Volume 4 of 4**  
**Additional Section 305(b) Submittal Requirements**

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## TABLE OF CONTENTS

<b>CHAPTER 1</b>	<b>INTRODUCTION.....</b>	<b>1-1</b>
1.1	PURPOSE .....	1-1
1.2	ASSESSMENT METHODOLOGY AND TERMS .....	1-2
1.3	DES SURFACE WATER QUALITY ASSESSMENT WEBSITE .....	1-2
<b>CHAPTER 2</b>	<b>SOCIAL / ECONOMIC IMPACTS OF CLEAN WATER.....</b>	<b>2-1</b>
2.1	OVERVIEW.....	2-1
2.2	SOCIAL IMPACTS OF CLEAN WATER.....	2-1
2.3	ECONOMIC IMPACTS OF CLEAN WATER .....	2-1
2.3.1	<i>Federal Construction Grants Programs .....</i>	<i>2-1</i>
2.3.2	<i>20% to 30% State Grant Program .....</i>	<i>2-2</i>
2.3.3	<i>State Revolving Fund (SRF) Program .....</i>	<i>2-2</i>
2.3.4	<i>Economic Value of Lakes, Rivers, Streams and Ponds.....</i>	<i>2-4</i>
<b>CHAPTER 3</b>	<b>NONPOINT SOURCE MANAGEMENT .....</b>	<b>3-1</b>
3.1	OVERVIEW.....	3-1
<b>CHAPTER 4</b>	<b>REFERENCES.....</b>	<b>4-1</b>

## LIST OF TABLES

TABLE 2-1: STATE REVOLVING FUND COMMITMENTS FOR 2002 & 2003 .....	2-3
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## LIST OF APPENDICES

<b>APPENDIX A: 2002 NONPOINT SOURCE MANAGEMENT ANNUAL REPORT.....</b>	<b>A</b>
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## CHAPTER 1 INTRODUCTION

### 1.1 PURPOSE

The Federal Water Pollution Control Act [PL92-500, commonly called the Clean Water Act (CWA)], as last reauthorized by the Water Quality Act of 1987, requires each state to submit two surface water quality documents to the U.S. Environmental Protection Agency (EPA) every two years. Section 305(b) of the CWA requires submittal of a report (commonly called the “305(b) Report”), that describes the quality of its surface waters and an analysis of the extent to which all such waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water.

The second document is typically called the “303(d) List “ which is so named because it is a requirement of Section 303(d) of the CWA. The 303(d) List includes surface waters that are:

- impaired or threatened by a pollutant or pollutant(s),
- not expected to meet water quality standards within a reasonable time even after application of best available technology standards for point sources or best management practices for nonpoint sources and,
- require development and implementation of a comprehensive water quality study (i.e., called a Total Maximum Daily Load or TMDL study) that is designed to meet water quality standards.

The 2004 Section 305(b) and 303(d) Surface Water Quality Assessment Report is comprised of the following four volumes:

- Volume 1 – Assessment Methodology and Summaries by Waterbody Type
- Volume 2 – Individual Surface Water Assessments
- Volume 3 – Section 303(d) List
- Volume 4 – Additional Section 305(b) Submittal Requirements

The purpose of Volume 1 is to provide the methodology for making assessments and a summary of the surface water quality assessment results for each of the following waterbody types:

- Estuaries
- Impoundments
- Lakes and Ponds
- Ocean (within State jurisdiction)
- Rivers and Streams
- Wetlands (not assessed this cycle)

Volume 2 includes assessment results for each individual surface water or assessment unit (AU). For this assessment cycle, surface waters in New Hampshire were divided into over 5000 individual AUs. Consequently, the list in Volume 2 is quite extensive.

Volume 3 (this document) includes the Section 303(d) List as described above.

Finally, this document (Volume 4) includes additional CWA Section 305(b) submittal requirements such as analyses on the social and economic impacts of clean water and information on the nonpoint source program. Together, Volumes 1 through 4 fulfill Section 305(b)/ 303(d) reporting requirements.

## **1.2 ASSESSMENT METHODOLOGY AND TERMS**

The 2004 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology (i.e., the CALM) describes in detail how surface water quality assessment decisions were made. The CALM also includes descriptions and definitions of the many terms used in the assessment tables and lists presented in Volumes 1 through 3. A copy of the CALM is provided in Appendix B of this document for easy reference. Readers are strongly encouraged to read the CALM before reviewing assessments as it will help one to better understand and interpret assessment results.

## **1.3 DES SURFACE WATER QUALITY ASSESSMENT WEBSITE**

Readers are also encouraged to visit the DES Surface Water Quality Assessment website at [www.des.state.nh.us/wmb/swqa](http://www.des.state.nh.us/wmb/swqa) for downloadable copies of these documents as well as additional assessment information, lists and maps. The website also includes instructions to help find assessment information for any waterbody of interest. This includes one list sorted in alphabetical order by waterbody type and then waterbody name and another sorted by town/city, then waterbody type and then waterbody name. Using these lists the assessment unit number (or AUID) for any waterbody can be obtained. Knowing the AUID, Volumes 2 and 3 can be consulted to find assessment results.

## **CHAPTER 2 SOCIAL / ECONOMIC IMPACTS OF CLEAN WATER**

### **2.1 OVERVIEW**

Section 305(b)(1)(D)(ii) and (iii) of the CWA requires an estimate of the economic and social impact to achieve the objectives of Section 305(b) and the economic and social benefits of such achievement. The following is presented in fulfillment of this requirement.

### **2.2 SOCIAL IMPACTS OF CLEAN WATER**

Most people recognize the importance and benefits of clean water and place a high social value on it. Quantification of the social impacts of clean water, however, is difficult. Generally speaking though, there is a positive social impact when the designated uses of a surface water are being met (i.e., clean water) and a negative social impact when uses are not being attained. For example, there is a negative social impact (i.e., on public health) in surface waters where the use of fish consumption is impaired by the presence of toxins. Similarly, negative social impact can occur in waters where the general recreational/aesthetic enjoyment of the surface water is impaired by the presence of floating scums and excessive algal blooms. Thresholds for determining when designated uses are impaired (and therefore when positive and negative social impacts are likely to occur) are included in the State's surface water quality standards and Consolidated Assessment and Listing Methodology (NHDES, 2004).

### **2.3 ECONOMIC IMPACTS OF CLEAN WATER**

Like social impacts, quantification of the economic impacts of clean water are also difficult to determine with complete certainty. There is no doubt that there is a cost associated with keeping our waters clean. However, there is also an economic benefit in terms of increase in property value, additional revenue brought in by visitors attracted to our clean waters, lower treatment costs, etc.

Section 2.3.1 through 2.3.2 includes information on costs to keep our waters clean. Because data is not readily available for privately funded projects, the discussion focuses on the readily available information which includes costs associated with past or ongoing public pollution control projects that have received state and/or federal financial assistance. Other pollution abatement costs associated with federally funded Section 319 nonpoint source projects may be found in Appendix A.

With regards to economic benefit, Section 2.3.3 includes a review of a recently completed economic study to determine the economic value of New Hampshire's lakes, rivers, streams and ponds.

#### **2.3.1 Federal Construction Grants Programs**

Since the passage of the Federal Water Pollution Control Act of 1972 (Public Law 92-500), EPA assistance to municipalities for the planning, design and

construction of projects under the Construction Grants for Wastewater Treatment Works Program has totaled nearly \$442 million in grants. Under the State Aid Grant Program, New Hampshire has awarded grants for these projects of over \$337 million, with actual payments for these projects totaling nearly \$272 million. Although it is difficult to determine the actual contribution by municipalities to these projects, it is estimated that local shares over this period are nearly \$59 million. This would suggest a total commitment to wastewater treatment works projects in New Hampshire from all funding sources of \$838 million during the era of the Construction Grants Program. The phase-out of the federal construction grants program in 1990 was completed in New Hampshire with the administrative completion of all grant projects in Fiscal Year 1997.

### **2.3.2 20% to 30% State Grant Program**

In response to the phasing out federal grant funds, the Governor and Legislature stepped forward by enacting Chapter 277 of the Laws of 1992 to provide a new 20 to 30 percent state grant program for local water pollution control projects. This law directs DES to establish and maintain a priority list of projects eligible to receive grant funds, using the existing priority system developed under the federal construction grants program, and further directs that an annual public hearing be held to receive comments on the priority list. The New Hampshire Water Pollution Control Program has provided 268 grants to 124 municipalities totaling over \$69 million under this program. The current priority list includes 127 projects with total costs of nearly \$112 million in Fiscal Year 2004, and 47 projects with total costs of nearly \$99 million in Fiscal Year 2005.

### **2.3.3 State Revolving Fund (SRF) Program**

Under the State Revolving Fund Program, New Hampshire has received \$200,541,767 in Federal Fiscal Years (FFY) 1989 thru 2003 Title VI capitalization grant funds as of the end of FFY 2003. In addition, \$3,966,030 in Title II funds have been transferred to the State Revolving Fund. These amounts along with the required twenty percent state matching funds of \$42,605,791 have provided a total of \$247,113,588 for the State Revolving Fund Program. SRF loans to municipalities totaled \$225,514,955 through the end of FFY 2003. The repayment of loans by municipalities totaled \$83,344,650 through the end of FFY 2003 and loans from the repayment account totaled \$77,209,639 for the same period. The grand total of loans made from the SRF Program from all accounts totaled \$302,724,594. Actual disbursements for construction projects in progress totaled \$236,362,007 through the end of FFY 2003. A summary of SRF projects funded in 2002 and 2003 is provided in Table 2-1.

**Table 2-1: State Revolving Fund Commitments For 2002 & 2003**

<u>Municipal Loan Recipient</u>	<u>Improvement Funded</u>	<u>Waterbody Benefited</u>	<u>Loan Amount</u>
Manchester	CSO Separation	Merrimack River	\$4,330,000
Tamworth	Landfill Closure	Groundwater Protection	\$1,065,440
Newport	Sewer Rehabilitation	Sugar River	\$240,000
Berlin	WWTP Improvements	Androscoggin River	\$8,342,200
Rochester	Gonic I/I Elimination	Cocheco River	\$1,500,000
Portsmouth	Sewer System Improvements	Piscataqua River	\$4,100,000
Goffstown	Landfill Closure	Groundwater Protection	\$64,499
Hooksett	WWTP Improvements & Biosolids Handling	Merrimack River	\$3,500,000
Carroll County	WWTP Upgrade	Groundwater Protection	\$1,260,000
Jaffrey	WWTP Improvements	Contoocook River	\$2,813,118
Claremont	Landfill Closure	Groundwater Protection	\$150,000
New Ipswich	Landfill Closure	Groundwater Protection	\$800,000
Rollinsford	WWTP Improvements	Salmon Falls River	\$1,800,000
Stark	Landfill Closure	Groundwater Protection	\$242,000
Hampton	Facilities Plan Update & Interceptors	Tide Mill Creek	\$2,200,000
Nottingham	Landfill Closure	Groundwater Protection	\$480,000
Portsmouth	Sewerage Improvements	Piscataqua River	\$5,000,000
Newport	Cheney Street Sewer	Sugar River	\$357,000
Total			\$38,244,257



### 2.3.4 Economic Value of Lakes, Rivers, Streams and Ponds

In 2002, the New Hampshire Lakes Association commissioned a study on behalf of the Lakes, Rivers, Streams and Ponds Partnership to provide estimates of the economic value from fishing, swimming, boating, public drinking water supplies and waterfront property ownership for lakes, rivers, streams and ponds in New Hampshire (Shapiro and Kroll, 2003). A copy of this study is available at <http://www.nhlakes.org/docs/EcoStudyPhaseII.pdf>. The Steering Committee for this economic study consisted of the following with contributions from numerous other organizations and agencies:

- NH Lakes Association
- NH Rivers Council
- NH Department of Environmental Services
- NH Department of Fish and Game
- Squam Lakes Association
- Lake Sunapee Protective Association
- Newfound Lake Region Association.

Results of this study are summarized below (from Shapiro and Kroll, 2003).

- The total sales generated by recreational uses (i.e., boating, fishing, swimming) of New Hampshire's freshwaters, and by public drinking water supplies, range from \$1.1 billion to as much as \$1.5 billion annually.
- Annually, there are approximately 14.7 million visitor days spent by both residents and nonresidents in New Hampshire boating, fishing, and swimming. These visitor days represent roughly 65% of the State's summer visitor days and roughly 25% of the State's annual visitor days.
- Days spent boating, fishing and swimming collectively generate approximately:
  - \$320 million to \$340 million in annual household income;
  - 9,000 to 15,000 full- and part-time jobs; and,
  - \$850 million to \$1.2 billion in annual total sales, which represents 8% to 12% of the total impact of visitor spending on the State's economy.
- Nearly 200,000 households and businesses rely on public drinking water from surface water supplies. This generates approximately \$75 million to \$150 million in annual household income, 1,900 to 2,600 full-and part-time jobs, and \$276 million to \$300 million in annual total sales.
- A preliminary estimate suggests that waterfront property owners on lakes, rivers, streams and ponds pay an estimated \$247 million per year in property taxes.

The study confirms that the economic value of our fresh surface waters is significant based on these five factors. In reality the value is much higher as the study did not include:

- Other recreational uses such as hunting waterfowl, shoreline picnics or birdwatching;
- Commercial and industrial uses of surface waters;
- The economic benefit of business locating in NH due to access to surface waters;
- People's willingness to pay to keep surface waters clean for themselves as well as future generations.

In the future, the partnership intends to examine the impact of environmental degradation on the economic value of New Hampshire's surface waters. Completion of this next phase, however, is dependent on the availability of funding.

## CHAPTER 3 NONPOINT SOURCE MANAGEMENT

### 3.1 OVERVIEW

Section 305(b)(1)(E) of the CWA requires a description of the nature and extent of nonpoint sources of pollutants, and recommendations as to the programs which must be undertaken to control each category of such sources, including an estimate of the costs of implementing such programs. The following is presented in fulfillment of this requirement.

Nonpoint source (NPS) pollution, unlike pollution for industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water. .

Volume 1 of the 2004 Section 305(b) and 303(d) Surface Water Quality Report includes a summary of sources of impairment for each waterbody type. As can be surmised by examining the source of impairment tables, most causes of impairment are suspected of being due to nonpoint sources (including the majority that are listed as unknown sources).

DES has a very active nonpoint source program which is administered by the DES Watershed Management Bureau, Watershed Assistance Section (<http://www.des.state.nh.us/WMB/was/>). Funds for Watershed Assistance Grants are appropriated through the DES Watershed Assistance Section from the U.S. Environmental Protection Agency under Section 319 of the Clean Water Act. Grant funds are available to identify and address nonpoint source pollution problems through watershed management, including assessment, planning, and implementation. A database of funded projects can be found at [http://www.des.state.nh.us/OneStop/Watershed\\_NPSGrants\\_Query.aspx](http://www.des.state.nh.us/OneStop/Watershed_NPSGrants_Query.aspx).

Each year, management reports are prepared which provide an overview of activities funded by the Section 319 program for the previous year as well as other activities within the within DES that address nonpoint source pollution. The annual reports provide a sense of the scope of work and costs that are necessary to abate various types of impairment caused by nonpoint sources as well as an indication of where future nonpoint source control efforts will be focused. A copy of the nonpoint source management annual report for 2002 is provided in Appendix A.

## **CHAPTER 4    REFERENCES**

Shapiro and Kroll, 2003. Estimates of Select Economic Values of New Hampshire Lake, Rivers Streams and Ponds, Phase II Report. June, 2003. Dr. Lisa Shapiro and Ms. Heidi Kroll.

## **APPENDIX A: 2002 Nonpoint Source Management Annual Report**